WHAT IS CLAIMED IS:

1. A method for inspecting leakage of a container, comprising:

a differential pressure generation step of generating a differential pressure between the inside and the outside of a container;

an ozone gas addition step of adding ozone gas to a higher pressure side of the inside and the outside of the container;

an ozone concentration detection step of measuring an ozone concentration of a lower pressure side of the inside and the outside of the container; and

a leakage determination step of determining presence of the leakage of the container based on a change in the ozone concentration.

2. The method according to claim 1,

wherein the differential pressure generation step has a container storage step of storing the container in a storage container, and a container pressurization/pressure reduction step of operating one of pressurization and pressure reduction for one of the container and the storage container.

3. The method according to claim 1,

wherein the ozone gas addition step has an ozone gas

generation step of generating ozone gas from the atmosphere, and an ozone gas feeding step of feeding the ozone gas to the higher pressure side of the inside and the outside.

4. The method according to claim 1,

wherein the ozone concentration detection step has an ozone concentration measuring step of measuring an ozone concentration in a lower part of the inside or the outside by an ozone sensor, and an ozone concentration signal output step of outputting a signal corresponding to the measured ozone concentration.

5. The method according to claim 1,

wherein the leakage determination step has an ozone concentration comparison step of calculating a concentration difference between the ozone concentration and a predetermined ozone concentration, and an ozone concentration determination step of determining presence of leakage when the concentration difference is larger than a predetermined value.

6. The method according to claim 1,

wherein the container is used as a container in which liquid is sealed.

7. An apparatus for inspecting leakage of a container, comprising:

a storage container for storing a container therein in a sealed state;

a pressurization/pressure reduction device which communicates with one of the container and the storage container to operate one of pressurization and pressure reduction;

an ozone gas feeder for feeding ozone gas to a higher internal pressure side of the container and the storage container; and

an ozone concentration detector for measuring an ozone concentration in a lower internal pressure side of the container and the storage container,

wherein presence of leakage in the container is determined when the ozone concentration exceeds a predetermined value.